

**CONSTRUCTION OF  
SIXTH STREET WATERLINE EXTENSION – GRAND BOULEVARD TO  
RIMPAU AVENUE**

**PROJECT NO. 2018-03, NIB 19-019CA**

**SPECIAL PROVISIONS**

**SECTION R - ROADWAY**

The following Special Provisions supplement and amend the Standard Specifications for Public Works Construction 2015 Edition (Greenbook). These Special Provisions have been arranged into a format that parallels the Greenbook.

Bidders with pre-bid inquiries regarding the Work covered in this Section should be directed to Carol Appelt at [Carolyn.Appelt@coronaca.gov](mailto:Carolyn.Appelt@coronaca.gov) or (951) 279-3620.



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## SECTION R – ROADWAY PROVISIONS

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## **PART 2 - CONSTRUCTION MATERIALS**

All as provided in Part 2 of the Standard Specifications for Public Works Construction except as otherwise provided hereinafter.

### **SECTION 201 – CONCRETE, MORTAR, AND RELATED MATERIALS**

#### **201-1 PORTLAND CEMENT CONCRETE**

##### **201-1.1.1 General.**

*Insert the following as the second paragraph:*

Contractor shall furnish the Engineer a copy of the mix design to be used and with legible certified weight-master's certificate for each load of PCC delivered to the work site. Portland Cement concrete delivered to the site having a water content and/or slump greater than that specified in the mix design shall be rejected and removed from the Work site.

##### **201-1.4.4 Hand Mixing.**

*Insert the following after the first sentence:*

Hand mixing concrete shall not be allowed except by prior permission from the Engineer. Prepackaged unmixed concrete shall not be allowed except by prior permission from the Engineer.

#### **201-2 REINFORCEMENT FOR CONCRETE.**

##### **201-2.2 Steel Reinforcement.**

##### **201-2.2.1 Reinforcing Steel.**

*Replace the first sentence in the first paragraph with the following:*

Unless otherwise specified, reinforcing steel, except longitudinal steel shall be Grade 60 billet steel conforming to ASTM A615.

#### **201-4 CONCRETE CURING MATERIALS.**

##### **201-4.1.1 General.**

*Replace the first sentence in the fourth paragraph with the following:*

Unless otherwise shown on the Plans, Type 2, white pigmented curing compound shall be applied to all finish concrete work immediately after the finishing work has been completed.

### **SECTION - 206 MISCELLANEOUS METAL ITEMS**

*Add the following subsection:*

#### **206-7 STEEL PLATE COVERS.**

##### **206-7.1 General.**

Steel plate covers shall conform to Table 206-7.1 (A) and to City of Corona Standard Plan No. 151.

**TABLE 206-7.1 (A)**

<b>Trench Width<sup>1</sup></b>	<b>Minimum Plate Thickness</b>
10 inches (25 cm)	½ inch (13 mm)
1 foot-11 inches (58 cm)	¾ inch (19 mm)
2 foot-7 inches (80 cm)	7/8 inch (22 mm)
3 foot-5 inches (104 cm)	1 inch (25 mm)
5 foot-3 inches (160 cm)	1 ¼ inch (32 mm)

1. For spans greater than 5 feet - 3 inches (160 cm), a structural design by a Registered Structural

or Civil Engineer shall be submitted and approved in accordance with 2-5.3. The steel plate covers shall be designed to withstand an HS20-44 AASHTO Bridge Loading or as specified on the Plans.

Steel plates shall have a surface that is roughened, taped, coated or otherwise modified to provide the non-skid surface shown on the Plans or specified in the Special Provisions.

## **SECTION 214 – TRAFFIC STRIPING, CURB AND PAVEMENT MARKINGS, AND PAVEMENT MARKERS**

### **214-4 PAINT FOR STRIPING AND MARKINGS.**

#### **214-4.1 General.**

*Insert the following after the last paragraph:*

All striping and pavement marking shall be thermoplastic ALKYD BINDER unless specified otherwise on the Plans. Paint, when approved in lieu of thermoplastic material, for traffic striping and pavement markings shall be manufactured by Bauer Coatings Chemicals Division or approved equal. Colors shall be white (1039 A9), yellow (1040 A9), or black (11 A9), as required and shall be approved by the Engineer prior to application.

### **214-6 PAVEMENT MARKERS.**

#### **214-6.4 Retroreflective Pavement Markers.**

##### **214-6.4.1 General.**

*Replace the last sentence of the first paragraph with the following:*

The exterior surface of the shell shall be smooth and contain 1 or 2 methyl methacrylate prismatic faces of the color to match existing.

### **214-7 ADHESIVES FOR PAVEMENT MARKERS.**

#### **214-7.1 General.**

*Replace the last sentence of the first paragraph with the following:*

The type of adhesive to be applied shall be as specified in the Special Provisions.

#### **214-7.2 Epoxy Adhesives.**

##### **214-7.2.1 General.**

*Replace the first sentence with the following:*

Epoxy adhesive shall be rapid-set.

*Add the entire following Section:*

## **PART 3 – CONSTRUCTION METHODS**

All as provided in Part 3 of the Standard Specifications for Public Works Construction except as otherwise provided hereinafter.

## **SECTION 300 – EARTHWORK**

### **300-1 CLEARING AND GRUBBING.**

#### **300-1.1 General.**

*Insert the following after the second paragraph:*

Clearing and Grubbing shall also include but not be limited to:

- a) Removing any existing plant material (including roots), rocks, concrete, boulders, asphalt, and any other trash or debris to a depth of 12 inches below top of curb elevations.

- b) Protection of all existing improvements within the Project area, including all materials, temporary fencing, and labor required to protect existing improvements.

Removal shall be disposed of in a legally acceptable manner outside of right-of-way. All green waste material shall be disposed of at a recycling center. Contractor shall provide weight tickets as evidence of disposal of all green waste.

#### **300-1.4 Payment.**

*Replace the first sentence with the following:*

Payment for "Clearing and Grubbing" shall be at the lump sum Bid price and shall include full compensation for subgrade preparation, material, placement, removal, labor, tools, equipment, and incidental necessary to do the work involved thereof, complete, in place and accepted.

### **SECTION 301 – SUBGRADE PREPARATION, TREATED MATERIALS, AND PLACEMENT OF BASE MATERIALS**

#### **301-1.6 Adjustment of Manhole Frame and Cover Sets to Grade.**

*Replace the first three sentences of the first paragraph with the following:*

Adjustment of manhole frame and cover including utility vault frame and cover to grade shall be in accordance with Standard Plan 152. Adjustment of water valve slip can and/or sleeve shall be in accordance with Standard Plan 422. Contractor shall be responsible to provide all slip cans and/or sleeves needed to adjust the water valve covers. Existing manholes and utility vaults shall be ramped with minimum 10 feet round with temporary asphalt. Temporary asphalt ramps shall be completely removed prior to asphalt overlay. The area around each manhole or utility vault must be compacted prior to paving.

It is the Contractor's responsibility to coordinate with other agencies to adjust to grade manhole, valve, and utility vault frame and cover of any facility owned/maintained by each agency. Prior to beginning of work, Contractor will submit to the Engineer a copy of all correspondences with each utility company.

*Add the following subsections:*

##### **301-1.6.1 Protect Existing Manhole from Debris.**

Contractor shall exercise care so that surface materials such as rocks, dirt, and debris do not enter the pipeline. In order to prevent contamination, Contractor shall be required to provide a ¾-inch thick plywood platform to be placed on the concrete shelf at the bottom of the manhole prior to any cold milling pavement work. The shape of this platform shall conform to the circumference of the inside wall at the shelf elevation. After the manhole has been adjusted, the material accumulated on the plywood shelf along with the plywood shelf shall be removed from the manhole and disposed of in accordance with 300-1.3. Payment for all preparatory work, material, equipment, and labor for installation and removal of the false manhole bottom shall be included in the various items of work involved and no additional compensation shall be allowed therefor.

##### **301-1.6.2 Protect and Clean Water Valve.**

Contractor shall exercise care so that surface material such as rocks, dirt, and debris do not enter a water valve. Contractor shall uncover water valves at the end of construction for final inspection. Any debris found inside a valve shall be removed by use of vacuum truck. Payment for protecting, inspecting, and cleaning water valves shall be included in the various items of work involved and no additional compensation shall be allowed therefor. The Contract Unit Price Bid shall include, but is not limited to all preparatory work, material, equipment, and labor required to perform the work.

#### **301-1.7 Payment.**

*Replace the third and fourth paragraph with the following:*



Payment for adjusting manhole frame and cover, utility vault frame and cover, and water valve shall be made at the Contract Unit Price Bid and not additional compensation will be allowed. The Contract Unit Price Bid shall include the cost of double adjustment to lower the manhole frame and cover, utility frame and cover, or water valve to subgrade elevation and to restore the manhole frame and cover, utility vault frame and cover, or water valve to the final elevation and shall be paid 50% for each adjustment.

### **301-2 UNTREATED BASE.**

#### **301-2.3 Compacting.**

*Insert the following as the first paragraph.*

It shall be the Contractor's responsibility to provide adequate equipment and methods to accomplish the Work in accordance with these provisions. The grading shall be done to the elevations provided in the Plans. Any field conditions that prevent the Contractor from matching design elevations shall be immediately notified to the Engineer.

*Replace the first sentence of the third paragraph with the following:*

Relative compaction of not less than 95% shall be obtained for a minimum depth of 1.0 foot below the grading plane.

## **SECTION 302 – ROADWAY SURFACING**

### **302-1 COLD MILLING OF EXISTING PAVEMENT.**

#### **302-1.1 General.**

*Add the following after the last paragraph:*

Contractor shall furnish one or more planning machines operated by experienced workmen. The surface produced shall have a tolerance so that a 10-foot straight edge laid laterally will indicate variance of less than 3/16-inch. Removal shall consist of: (1) planning and cutting the pavement to form a keyway header cut; and (2) removing the loosened material. Loosened material shall be stored on the property of the Contractor and shall be disposed of off-site at the end of each workday.

Directly following the cold plane operation, all asphalt pavement joints within travel lanes that have vertical separation of more than 0.5-inch shall be ramped with temporary asphalt concrete. Ramps shall be no less than 10 feet in length from the joint and shall extend across all travel lanes. Temporary asphalt ramps shall be completely removed and disposed of off the job site prior to overlay application.

After cold milling and at least 24 hours prior to overlay, all cracks shall be sealed in accordance with 302-1.7.1.

#### **302-1.7 Work Site Maintenance.**

*Replace the second sentence with the following:*

Street sweeping equipment shall conform to 7-8.1. Contractor shall provide a minimum of two sweepers at all times during cold milling at no additional cost to the City. One motorized street sweeper shall follow within 50 feet of the cold milling machine unless otherwise approved by the Engineer. Cold milled areas shall be swept at least once daily until the area is paved.

*Add the following subsection:*

##### **302-1.7.1 Crack Sealing.**

In areas where an overlay of asphalt concrete is to be made on existing paving, all cracks 1/8<sup>th</sup>-inch wide or wider shall be sealed prior to the construction of an asphalt concrete overlay. The Engineer will make the sole determination as to which cracks shall be sealed.

Contractor shall spray weeds in cracks with commercial grade weed killer or approved equal

method prior to applying sealant. All cracks 1/8 inch to 1 ½ inches wide shall be sealed with a hot applied rubberized asphalt sealant. The sealant shall be Crafcro Polyflex Sealant, Type 2 or 3, or an approved equal. The Sealant shall be applied in accordance with the manufacturer's instructions.

Cracks greater than ¼ inch wide but less than ½ inch wide shall be cleaned full depth by routing and blowing operations prior to applying the sealant. Cracks ½ inch wide but less than 1 ½ inches wide shall be cleaned full depth by blowing operations prior to applying the sealant.

All cracks 1 ½ inches or wider shall be cleaned full depth, a tack coat applied to the edges and filled with a fine asphalt concrete hot mix.

Care shall be taken to avoid excess sealant being applied to the existing asphalt concrete surface. A squeegee shall be used to spread out excess sealant on small cracks. There shall be a ½ inch deep cup-shaped groove between the existing asphalt concrete surface and the top crack sealant placed in cracks ½ inch wide or wider. Excess sealant, as solely determined by the Engineer, shall be removed at the Contractor's expense. Contractor shall keep traffic off of areas receiving crack seal until it has cured to the point where it will not be removed from cracks by vehicle tires. Cracks shall be sealed a minimum of seven days prior to placing asphalt concrete overlay.

Payment for crack sealing shall be considered as included in the bid prices paid for asphalt concrete overlay and no additional compensation will be allowed.

### **302-1.9 Traffic Signal Loop Detectors.**

*Add the following after the last sentence:*

Contractor shall notify the Engineer a minimum of 3 Working Days prior to the start of cold milling asphalt concrete pavement on any street containing traffic signal loop detectors.

## **302-5 ASPHALT CONCRETE PAVEMENT.**

### **302-5.4 Tack Coat.**

*Replace the first sentence of the first paragraph with the following:*

Tack Coat shall be grade SS-1h emulsified asphalt, where required, and shall be uniformly applied at a rate no less than 0.07 gallons per square yard. Payment for this item shall be included in the unit price for asphalt overlay and no additional compensation will be allowed.

### **302-5.4 Distribution and Spreading.**

*Insert the following as item (f) under the seventh paragraph:*

(f) Longitudinal joints in the top layer must match lane lines. Alternate the longitudinal joint offsets in the lower layers at least 0.5 foot from each side of the lane line. Other longitudinal joint placement patterns are allowed if authorized by the Engineer.

### **302-5.8 Manholes (and Other Structures).**

*Insert the following as the first paragraph:*

Manhole frames and covers shall be adjusted to grade in accordance with Standard Plan 152. Manhole frames and covers within the area to be paved or graded shall be set to finished grade by the Contractor as required by the Plans and Specifications.

## **302-6 PORTLAND CEMENT CONCRETE PAVEMENT.**

### **302-6.1 General.**

*Insert the following after the first sentence:*

Formwork shall be approved by the Engineer before placing concrete. The work shall include, but not be limited to the saw cutting, removal and disposal of AC and sub-base, sub-grade preparation, base material, compaction, placement, materials, rebar, all labor, tools, equipment

and incidentals necessary to do all of the work as specified on the Plans or as directed by the Engineer.

## **SECTION 303 – CONCRETE AND MASONRY CONSTRUCTION**

### **303-5 CONCRETE CURBS, WALKS, GUTTERS, CROSS GUTTERS, ALLEY INTERSECTIONS, ACCESS RAMPS AND DRIVEWAYS.**

#### **303-5.1.1 General.**

*Replace the second paragraph with the following:*

PCC curbs and gutters shall be constructed in accordance with Standard Plan 135 or 136, in place with the exception that expansion joints shall not be at more than 20-foot intervals and weakened plane joints shall be at 10-foot intervals. PCC curbs and gutters, sidewalks, cross gutters, driveways and access ramp work shall satisfy the following as applicable:

- a) Formwork shall be approved by the Engineer before placing PCC.
- b) Expansion joint material shall be pre-molded asphalt expansion joint filler and shall penetrate and be continuously one piece through the curb and gutter.
- c) Shapes and sizes of PCC curbs and gutters shall be as indicated on the drawings and the concrete shall be placed in such a manner as to prevent distortion of the forms and shall be vibrated as required to ensure an acceptable product.
- d) As soon as the concrete will allow, Contractor shall strip the forms and trowel smooth the curb face and top. Contractor shall tool the edges of expansion joints with an approved ½-inch-edging tool.
- e) The completed curb and gutter shall be protected from damage until accepted.
- f) Where any curb and gutter requires repair before acceptance, the repair shall be made by removing and replacing the entire curb and gutter between joints and not by refinishing the damaged portion.

#### **303-5.5.3 Walk.**

*Insert the following before the first paragraph:*

Sidewalks shall be constructed in conformance with the Standard Plan 142.

Exterior walkways and flatwork shall be directly supported on 90% compacted, on-site silty sandy soil. Subgrade soils underlying in slab areas shall be maintained in a moist condition until just prior to the placing of concrete slabs.

The sidewalk surface shall not vary more than 0.02 feet from a 10-foot straightedge except at grade changes. The finished surface shall be free of humps, sags, blemishes, or other irregularities. All sidewalks shall be a minimum of 4 inches thick except at the driveways where the sidewalks shall be a minimum of 6 inches thick for single family residential areas and 8 inches thick for all other areas.

#### **303-5.5.4 Gutter.**

*Insert the following as the first sentence of the first paragraph:*

Cross gutters and spandrels shall be constructed in accordance with the Standard Plan 145. Prior to acceptance of the valley gutter constructed by the Contractor, a flow test shall be conducted by the Contractor in the presence of the Engineer. Any new work found to be defective shall be repaired or replaced by the Contractor in accordance with 303-5.7.

#### **303-5.5.5 Alley Intersections, Access Ramps, and Driveways.**

*Delete "access ramps" from the first paragraph and add the following as the second paragraph:*

Curb ramp shall be constructed per design drawings and shall also conform to Standard Plan 146 or 147. Curb face depressions shall conform to the details of the Plans, ADA and Title 24, these Specifications or whichever is the most stringent or as directed by the Engineer. Measurement for this item shall be from the beginning of the curb return to the end of curb return.

### **303-5.9 Measurement and Payment.**

*Insert the following as the first sentence:*

Payment for concrete curb and gutter, retaining curb, sidewalk, driveways, pedestrian access ramps (including detectable warning surface, curbs, and retaining curbs), detectable warning surface installed on existing access ramps, cold milling existing gutter lips shall be at the Contract Unit Price shown on the Bid and shall include full compensation for subgrade preparation, base material, placement, materials, all labor, tools, equipment and incidentals necessary to do all of the work involved thereof, complete in place and accepted.

## **SECTION 304 – METAL FABRICATION AND CONSTRUCTION**

*Insert the following section:*

### **304-5 STEEL PLATE COVERS.**

#### **304-5.1 General.**

Whenever openings, trenches and excavations cannot be completely backfilled or resurfaced within the work day, they shall be bridged with steel plate covers to permit an unobstructed flow of traffic, bicyclists, and pedestrians. The Contractor shall provide and install the steel plate covers. The steel plate covers shall be approved by the Agency and conform to 206-7, the Plans and:

- a) Be secured against movement using holding devices such as adjustable cleats, angles, bolts, tack welding or other devices.
- b) Be installed to operate with a minimum of noise.
- c) Extend 1-foot minimum beyond the edges of the trench.

The steel plate covers shall provide complete coverage to prevent any pedestrian, bicyclist or motor vehicle from being endangered due to movement of the steel plate covers causing separations or gaps.

The trench shall be adequately shored to support the steel plate covers, traffic and pedestrians. Temporary paving materials in conformance with 306-1.5.1 shall be used to feather the edges of the steel plates to minimize wheel impacts and comply with ADA.

Steel plate covers shall be installed using either Method 1 or 2.

Method 1. For posted speeds more than 45 MPH the pavement shall be cold milled to a depth equal to the thickness of the plate and to a width and length equal to the dimensions of the plate.

Method 2. For posted speeds less than 45 MPH the approach to the plate(s) and ending of the plate (in longitudinal placement) shall be attached to the Roadway by a minimum of 2 dowels per- plate drilled into the corners of the plate and drilled 2 inches into the pavement. Subsequent plates may be butted next to each other. When the steel plates are removed, the dowel holes in the pavement shall be backfilled with either graded fines of asphalt concrete mix, concrete slurry or an equivalent. The Contractor has the option of installing the steel plates covers using Method 1 for speeds less than 45 MPH.

When steel plate covers are installed in conformance with Method 2, temporary asphalt paving material conforming to an “E” gradation shall be placed in:

- a) Roadways shall be placed with a 4-inch run for each 1-inch thickness of steel plate cover.
- b) Bike paths or routes shall be placed with an 8-inch run for each 1-inch thickness of steel plate cover.
- c) Pedestrian ways, including cross walks, shall be placed with a 12-inch run for each 1-inch thickness of steel plate to comply with ADA.

Contractor shall be responsible for maintenance of the steel plate covers and asphalt concrete ramps.

Advance traffic warning signs are required when steel plate covers are installed. The signs shall comply with the California MUTCD, be as specified in these Special Provisions or as shown on the TCP.

When steel plate covers are removed, any damaged pavement shall be repaired with either asphalt concrete mix conforming to a "D2" gradation asphaltic cold mix or concrete slurry as specified in these Special Provisions.

### **304-5.2 Payment.**

Full compensation for furnishing and installing steel plate covers shall be considered as included in the prices in the Bid for the various items that required the steel plate covers.

*Add the entire section as follows:*

## **SECTION 313 – TEMPORARY TRAFFIC CONTROL**

### **313-1 GENERAL.**

#### **313-1.1 General.**

Contractor shall install and maintain all required traffic control devices, provide flaggers throughout the Work area as shown in the WATCH, TCP, or as specified in the plans or these Special Provisions and promptly remove the traffic control devices when they are no longer required. The Work area shall include the Work site and the areas required for advance signing and transitions to and from the traffic control zone. Unless otherwise provided in these Special Provisions, traffic shall be permitted to pass through the Work area in conformance with the WATCH, or TCP. Unless otherwise specified in the WATCH, TCP, or these Special Provisions, the Work shall be performed in half the roadway at one time. One half shall be kept open and unobstructed until the opposite side is ready for use. If one-half a street is being improved, the other half shall be conditioned and maintained as a detour.

Contractor engaged in setting up or removal of traffic control zones shall be properly licensed. All personnel engaged in setting up or removal of traffic control zones, including flaggers shall be properly trained.

Traffic control activities and milestones shall be shown as activities on the Contractor's construction schedule in conformance with 6-1.

Whenever the term "hours of darkness" is used in the Specifications, it shall be deemed to mean the hours of darkness as defined in Division 1, Section 280, of the California Vehicle Code.

Contractor shall patrol and monitor the Work site to ensure that all traffic control devices are in place and operating at all times. Any traffic control devices that are displaced or not in an upright position shall be replaced or restored to their original location in an upright position by the Contractor. The Contractor shall ensure that all traffic control devices are repaired, replaced, and cleaned as necessary to preserve their appearance and visibility. Traffic control devices that are damaged from any cause during the progress of the Work shall be repaired, including painting if necessary, or replaced by the Contractor at the Contractor's expense.

Any action on the part of the Engineer in directing the Contractor's attention to any inadequacy of the required devices and services or any action of the Agency to alleviate the Contractor's inadequacies shall not relieve the Contractor from its responsibility for public safety or abrogate

its obligation to provide and maintain the traffic control devices and services. If the Contractor fails to provide and maintain these devices and services and the Agency is required to alleviate said condition, the total charges of labor, equipment and materials including overhead and transportation, accrued by the Agency for such work will be deducted from any monies due or that may become due to the Contractor.

### **313-1.2 Vehicular Traffic.**

Grading operations, pavement milling, roadway excavation and fill construction shall be conducted by the Contractor in a manner to provide a reasonably satisfactory surface for traffic. When rough grading is completed, the roadbed surface shall be brought to a smooth, even condition satisfactory for traffic.

Pavement disruptions 1½ inch or greater shall have a beveled edge of 4 horizontal to 1 vertical.

### **313-1.3 Pedestrian Traffic.**

Safe and adequate pedestrian zones and public transportation stops, as well as pedestrian crossings of the Work site at intervals not exceeding 300 feet shall be maintained unless otherwise approved by the Engineer. When sidewalks are closed an alternate walkway shall be provided. Pedestrians shall not be directed into direct conflict with vehicles operating within the Work site or other traffic. Where it is necessary to divert pedestrians into the parking lane or a street, barricading or temporary barriers conforming to 215-5.6 or 215-5.7 as specified in these Special Provisions shall be provided to separate the pedestrian walkway from the adjacent traffic lane.

If required by the Work, the Contractor shall close only one crosswalk at a time at intersections having 4 crosswalks. If the Work requires closure of 2 or more crosswalks at an intersection, the Contractor shall obtain approval from the Agency before implementation of the closure. Agency approval shall be obtained before closing any crosswalks at intersections having fewer than four crosswalks. The request for approval to close cross walks shall be submitted to the Engineer per 2-5.3. Pavement surface disruptions in areas subject to pedestrian traffic of ½-inch or greater shall have a beveled edge of 12 horizontal to 1 vertical in conformance with ADA.

All traffic control devices and zones shall conform to ADA requirements. Walkways in Work sites shall be maintained at least 4 feet in width. Obstructions within walkways shall be illuminated during hours of darkness. Minimum vertical clearance to any obstruction within the walkway shall be 7 feet.

### **313-1.4 Bicycle Traffic.**

When performing Work in any street or sidewalk attention shall be directed to the probability of encountering bicycle traffic. Roadways adjacent to Work sites particularly shoulders, parking or bike lanes, or routes shall be kept free of obstructions or other hazards to bicyclists.

When performing Work on a street with a designated bike lane or route special attention needs to be given to bicyclists. Pavement surface disruptions in marked bike lanes or routes of 1/2 inch or more shall have a beveled edge of 8 horizontal to 1 vertical. In addition, signs indicating the condition of the surface of the pavement shall be posted in accordance with the TCP or WATCH. If the pavement surface disruptions are not beveled and signs posted, the bicycle lane or route shall be closed.

When a bicycle lane or route is closed, signing shall be installed to terminate the bike lane or route and advise motorist and bicyclists that the previously separated bicycle traffic will be in the vehicular traveled way. Barricades used at the terminus or the closure shall be closely spaced to prevent physical passage by bicyclists into the closed bicycle lane or route. Warning tape may be used to close the gap between barricades to keep bicyclists out of the closed bicycle lane or route.

### **313-1.5 Work in the Vicinity of Railroads.**

When a street-rail grade crossing exists within or in the vicinity of the Work site, work area

traffic control shall be as shown on the TCP or WATCH and as specified in these Special Provisions. In no case shall lane restrictions, flagging or other operations be performed in a manner that would cause traffic to stop on the railroad tracks. Whenever the Work causes traffic to backup across an active railroad track, a flagger shall be provided.

### **313-1.6 Safety in Traffic.**

Contractor's attention is directed to the importance of safety when working in proximity to traffic. The Contractor shall take all precautions and establish such traffic control as is necessary to properly provide for the safety of all personnel and equipment on the Work site. Contractor shall comply with all the requirements of OSHA and CAL/OSHA.

Unusual conditions may arise on the Work which will require that immediate and unusual provisions be made to protect the public from danger or loss or damage to life and property, due directly or indirectly to the prosecution of the Work, and it is part of the service required of the Contractor to make such provisions and to furnish such protection.

Contractor shall use such foresight and shall take such steps and precautions as his operations make necessary to protect the public from danger or damage, or loss of life or property, which would result from the interruption or contamination of public water supply, irrigation, or other public service or from the failure of partly completed work.

Whenever, in the opinion of the Engineer, an emergency exists against which the Contractor has not taken sufficient precaution for the safety of the public or the protection of utilities or of adjacent structures or property which may be injured by process of construction on account of such neglect; and whenever, in the opinion of the Engineer, immediate action shall be considered necessary in order to protect public or private personnel or property interests, or prevent likely loss of human life or damage on account of the operations under the Contract, then and in that event the City may provide suitable protection to said interest by causing such work to be done and material to be furnished as, in the opinion of the Engineer, may seem reasonable and necessary.

The cost and expense of said labor and material together with the cost and expense of such repairs as may be deemed necessary shall be borne by the Contractor, and if the Contractor does not pay said cost and expense upon presentation of bills therefor, duly certified by the Engineer, then said cost and expense will be paid by the City and shall thereafter be deducted from any amounts due, or which may become due to said Contractor. Failure of the City, however, to take such precautionary measure shall not relieve the Contractor of full responsibility for public safety.

The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to the City.

## **313-2 TRAFFIC LANES AND CLEARANCES.**

### **313-2.1 General.**

Traffic lanes and clearances shall be as shown on the TCP, WATCH, or as specified in these Special Provisions. However, the Contractor shall provide and maintain minimum traffic lanes as specified in 314. Unless otherwise approved by the Engineer, when only one lane is provided in each direction, wider lanes shall be provided to separate opposing traffic and to accommodate turning movements. A minimum 18-foot lane shall be provided if parking is allowed.

Clearances to obstructions shall be as follows:

- a) 2 feet from vertical obstructions such as curbs, guardrails or temporary barriers.
- b) 10 feet from the edge of the traveled way to fixed objects, (utility poles, street lights, traffic signals poles, trees, large sign supports, etc.) unprotected by barriers. When the minimum clearance to fixed objects cannot be provided, temporary barriers shall be placed to protect the fixed object. On low speed local streets, and at the Contractor's option, temporary AC curb may be used in lieu of temporary barriers.

- c) 5 feet from any excavation or drop off of 2 inches or greater to allow placement of temporary barriers to keep traffic out of the Work site and minimize traffic surcharge on the excavation. When the 5-foot clearance to an excavation or drop off cannot be maintained, temporary barriers shall be placed to separate vehicles and bicycles from the excavation or drop off.

Bicycle Lanes shall have a clear width of not less than 5 feet. Any Bicycle Lane less than 5 feet wide shall be closed. If the Work site is in a Bike Path and requires the Bike Path be closed, a detour Bike Path, Lane or Route, with appropriate signage, shall be provided.

If the Engineer determines that it is necessary to decrease the minimum distances specified herein to allow for the prosecution of the Work, the Contractor shall provide all protective devices required by the Engineer to adequately protect the public and/or its workers.

### **313-3 TEMPORARY STRIPING AND PAVEMENT MARKINGS.**

Temporary striping/markings shall be as shown on the TCP and as specified in these Special Provisions. Removal shall conform to 314-2 and these Special Provisions. Immediately following the removal of temporary striping and pavement markings, the Contractor shall remove all residue from the pavement surface by power sweeping and thoroughly cleaning the area. Removal and cleaning shall be completed before relocation of new striping is started.

#### **313-3.1 Payment.**

Full compensation for the installation and removal of temporary traffic striping and pavement markings, shall be considered as included in the Contract lump sum bid item for "Traffic Control".

### **313-4 FLAGGERS.**

#### **313-4.1 General.**

The flagger's sole duties shall consist of directing the movement of public traffic through or around the Work site. Personnel selected to be flaggers shall be trained in the fundamental of flagging traffic before they are assigned to that responsibility. Flaggers shall also be properly equipped with an 18-inch x 18-inch Stop/Slow sign paddle. When used at night, the sign paddle shall be retroreflective. Under emergency conditions the flagger may use a flashlight and hand signals to direct traffic.

A W20-1 sign and a symbol sign of a flagger (W20-7a) shall be placed as far ahead of the flagger as practical. For high speed situations a "Prepare to Stop" (W3-4) sign should also be used. Flaggers shall be located such that approaching traffic will have sufficient distance to stop at the intended stopping point. From sunset to sunrise flagger stations shall be illuminated such that the flagger will be clearly visible to approaching traffic.

Flaggers shall be provided with high visibility clothing. Flaggers shall wear fluorescent orange or fluorescent strong yellow-green colored warning garments such as vests, jackets, or shirts. Rainwear, when worn, shall be orange, strong yellow-green, or yellow. During hours of darkness, flaggers shall be outfitted with garments of retroreflective material that shall be visible at a minimum distance of 1,000 feet.

Retroreflective material added to the clothing shall have a minimum of one horizontal stripe around the torso. White outer garments with retroreflective material may be worn during the hours of darkness in lieu of colored vest, jackets and/or shirts.

#### **313-4.2 Payment.**

The cost of furnishing flaggers, including transporting flaggers to provide for passage of traffic through the Work site shall be considered as included in the lump sum Bid and no additional compensation shall be allowed therefor. Payment will be prorated on a monthly basis over the duration of the Contract or until all flagging operations are complete.

### **313-5 SIGNS.**



**313-5.1 General.**

Signs shall include all temporary signs required for the direction of traffic through or around the Work site. Signs shall be as shown in the California MUTCD or WATCH. Signs shall be placed as specified in the TCP, WATCH or these Special Provisions.

Temporary “No Parking” and “No Stopping” signs shall be installed and removed as specified in the 7-10.

Whenever the pavement surface has been disrupted by cold milling, temporary trench resurfacing, steel plating, placement of hoses, etc. warning signs describing the pavement surface shall be installed.

Whenever an excavation 2 inches or deeper is made or exists within 2 feet of the traveled way the Contractor shall place “LOW SHOULDER” or “OPEN TRENCH” signs to warn drivers and/or bicyclists of the excavation. In addition, edge-line channelizer delineation shall be placed every 50 feet to 100 feet for the length of the excavation. If required, additional warning signs shall be placed beyond every intersecting street.

**313-5.2 Payment**

The cost of furnishing, installing and maintaining signs specified in this subsection, complete and in place, shall be considered as included in the prices Bid for the various items of Work.

**313-6 COVERING OR REMOVAL OF EXISTING TRAFFIC SIGNS AND SIGNAL FACES.****313-6.1 General.**

When the TCP or temporary traffic signal modification Plans show or the Special Provisions specify the temporary covering of traffic signs or signal indications, they shall be covered with material conforming to 215. No holes shall be drilled in any indications to attach the covers. Adhesive tape shall not be used to attach covers. Cardboard, wood, plastic sheets, bags or other field fabricated temporary covers shall not be used.

**313-6.2 Vehicle Heads.**

The Contractor shall cover all the non-functioning vehicle heads utilizing signal head covers complying with 215. The entire signal indication or portions of the indications shall be covered. A minimum of two vehicle heads for each phase shall be in operation while Work is being performed at an intersection except for approved shut downs.

**313-6.3 Pedestrian Indications.**

Pedestrian indications shall be covered with a cover conforming to 215. If audible pedestrian signals are in place, the audible warning device shall be temporarily disabled for the crossing taken out of service.

**313-6.3.1 Pedestrian Push Button.**

Pedestrian push buttons message signs shall be removed, reversed and remounted on the pedestrian push button assembly. Pedestrian push button assembly covers may be used instead of reversing and remounting pedestrian push button message signs.

**313-6.3.2 Audible Pedestrian Signals.**

Audible pedestrian signals shall be disabled by temporarily removing the load switches for the pedestrian indications within the traffic signal controller cabinet. The pedestrian indications shall be covered as specified herein.

**313-6.4 Signs.**

Sign covers shall be securely fastened to the sign to prevent movement or removal by the wind in conformance to 215.

**313-6.5 Payment.**

Payment for covering existing traffic signs and signal faces shall be considered as included in

the prices Bid for the various items of Work.

### **313-7 TRAFFIC SIGN ENHANCEMENT DEVICES.**

#### **313-7.1 General.**

Traffic sign enhancement devices consist of flags and “High Level Warning Devices”, warning lights, portable changeable message signs, flashing arrow boards and flashing arrow bars. High level warning devices or arrow boards shall be used at approaches to locations where work is being performed within or immediately adjacent to a traffic lane.

#### **313-7.2 Flags.**

Flags shall be placed as shown on the TCP or WATCH. Torn or dirty flags shall be replaced immediately.

#### **313-7.3 High Level Warning Device.**

High level warning devices shall provide advance warning of the Work site by being visible to drivers even when the Work site is obstructed from view by vehicles or other equipment. High level warning devices shall be placed as shown on the TCP or WATCH. The Contractor may use sandbags to add weight to the base or legs of high level warning devices.

#### **313-7.4 Warning Lights.**

Warning lights shall only be used outside of the Work area to provide advance warning as specified in the TCP. Warning lights used for advance warning must be clearly distinguishable from the primary delineation and shall be positioned above the normal reflectorized barricades. Warning lights shall be mounted at a minimum height of 3 feet measured from the bottom of the lens to the underlying surface.

The warning lights may be used in either a steady burn or flashing mode at the Contractor's option. Visors shall not be required during the hours of darkness. Torches and flares shall be used only in patrolled emergency situations.

#### **313-7.5 Portable Changeable Message Signs.**

Portable changeable message signs shall be furnished, placed, operated, and maintained at locations shown on the TCP and as specified in these Special Provisions. Portable changeable message signs may be placed in advance of or within the Work area. After initial placement portable changeable message signs shall be moved from location to location as directed by the Engineer.

Portable changeable message signs shall not be used for advertising or as a supplement for temporary traffic control signs and devices.

#### **313-7.6 Flashing Arrow Boards.**

Flashing arrow boards shall be furnished, placed, operated and maintained at locations shown on the TCP. Flashing arrow boards shall be mounted to provide a minimum of 6 feet, 10-11/16 inches clearance between the bottom of the sign and the roadway surface. The type of arrow board shall be as specified in the TCP.

#### **313-7.8 Payment.**

The cost of furnishing, installing and maintaining traffic sign enhancement devices specified in this subsection, complete and in place, shall be the price Bid for the Contract lump sum bid item “Traffic Control”.

### **313-8 CHANNELIZING DEVICES.**

#### **313-8.1 General.**

Channelizing devices include, but are not limited to cones, tubular markers (delineators), drums, barricades, temporary barriers. Channelizing devices shall be placed as shown on the

Plans, TCP, or WATCH.

On arterial streets, opposing traffic shall be separated by tubular markers, traffic striping or raised pavement markers. When traffic is diverted into a painted median to the left of an existing double yellow centerline or into a left turn lane, tubular markers shall be placed beyond the Work site to return traffic to its normal lanes.

### **313-8.2 Cones, Tubular Markers and Channelizers.**

Cones, tubular markers or channelizers shall be used on short-duration, and short-term stationary temporary traffic control zones as defined in the TCP. Tubular markers or channelizers shall be used on intermediate-term stationary temporary traffic control zones as defined in the TCP and when more visibility and stability are required.

### **313-8.3 Drums.**

Drums shall be used in lieu of cones or tubular markers for long-term stationary temporary traffic control zones as defined in TCP.

### **313-8.4 Barricades.**

Barricades shall be specified by type. Barricades shall be placed as shown on the TCP. Barricades shall not be placed in a merging lane of traffic without advance warning. Advance warning shall consist of a high-level warning device, arrow panel and other appropriate delineation shown on the TCP.

Type 1 and 2 barricades shall be used on local streets and sidewalks. However, Type 1 barricades should not be used where they may be encountered by the visually impaired unless horizontal tie bars are provided not more than 6 inches from the bottom of the barricade. Type 2 barricades shall be used in major, secondary and collector streets. Type III barricades shall be used for closing streets to through traffic and for other major operations where the barricades must remain in place for extended periods. Barricades shall be placed so there is no gap large enough for a vehicle to pass, except where necessary to provide access for local traffic or emergency vehicles.

Ballasting of barricades shall be by means of sand filled bags placed on the lower parts of the barricade frame or stays. Ballasting shall not be placed on top of the barricades or over any retroreflectorized barricade rail face facing traffic.

If barricades are displaced or are not in an upright position, from any cause, the barricades shall immediately be replaced or restored to their original location, in an upright position, by the Contractor.

### **313-8.5 Temporary Traffic Barriers.**

Temporary traffic barriers shall be placed as shown on the TCP. End treatment shall be as shown on the TCP. Water filled plastic barriers shall be used within sidewalks and bike paths. Concrete barriers shall be used within the vehicular way and bike lanes and routes.

Temporary barriers shall be placed on a firm, stable foundation. The foundation shall be paved or graded to provide a uniform bearing throughout the entire length of the barrier.

Abutting ends of adjoining segments shall be placed and maintained in alignment without offset to each other. Segments shall be positioned straight on tangent alignment and on a true arc on curved alignment.

If it is necessary to leave a gap between barrier segments due to equipment or special drainage features, the gap shall be closed at all times when the Work is not actively in progress at the location of the gap.

Water used to fill/ballast water filled plastic barriers shall be disposed of in a sanitary sewer system.

### **313-8.6 Payment.**

The cost of furnishing, installing and maintaining channelizing devices specified in this

subsection, complete and in place, shall be in the prices Bid for the various items of Work.

### **313-9 FLOOD LIGHTING.**

#### **313-9.1 General.**

When nighttime Work is being performed flood lights shall be used to illuminate the work site, flagger stations, equipment crossings and other hazardous areas. The flood lighting shall provide enough light to illuminate flagger stations, equipment crossings and other hazardous areas so they are visible for a distance of ½ mile. Care shall be exercised to ensure that the flood lights do not shine into the eyes of oncoming traffic.

#### **313-9.2 Payment.**

The cost of furnishing, installing and maintaining flood lighting shall be considered as included in the prices Bid for the various items of Work.

## **SECTION 314 – TRAFFIC STRIPING, CURB AND PAVEMENT MARKINGS, AND PAVEMENT MARKERS**

### **314-1 GENERAL.**

*Add the following after the first sentence in the first paragraph:*

Striping and pavement markings which are damaged or darkened as a result of construction, including wheel markings by public traffic or equipment, shall be repainted or replaced at the Contractor's expense.

### **314-2 REMOVAL OF TRAFFIC STRIPING AND CURB AND PAVEMENT MARKINGS.**

#### **314-2.1 General**

*Replace the first and second paragraphs with the following:*

Existing traffic stripes and pavement markings to be removed will be shown on the Plans or designated by the Engineer. Traffic stripes and pavement markings shall be removed to the fullest extent possible from the pavement by wet sandblasting or grinding. Alternative methods of removal require prior approval of the Engineer. These other methods must not materially damage the surface or texture of the pavement or surfacing. Sand or other material deposited on the pavement as a result of removing traffic stripes and markings shall be removed as the Work progresses.

Where blast cleaning is used for the removal of traffic stripes and pavement markings or for removal of objectionable material, and such removal operation is being performed within 10 feet of a lane occupied by public traffic, the residue, including dust shall be removed immediately after contact between the sand and the surface being treated. Such removal shall be by a vacuum attachment operating concurrently with the blast cleaning operation. Accumulations of sand or other material, which might interfere with drainage or might constitute a hazard to traffic, will not be permitted. Obliteration of traffic striping with black paint or light emulsion oil shall be done only with approval of the Engineer. Grinding shall be permitted when shown on Plans or approved by the Engineer. Grinding machines shall utilize new, sharp blades to prevent deep scarification and damage to the pavement. When necessary to protect the street, the Engineer will direct the Contractor to replace the blades at no additional cost to the City.

Where existing double yellow or two-way left turn lane lines are to be repainted, black lines shall be painted per 314-4, "Application of Traffic Striping and Curb and Pavement Markings." Where blast cleaning is used for the removal of traffic stripes and pavement markings or for removal of objectionable material, and such removal operation is being performed within ten (10) feet of a lane occupied by public traffic, the residue, including dust shall be removed immediately after contact between the sand and the surface being treated. Such removal shall be by a vacuum attachment operating concurrently with the blast cleaning operation.

The Contractor will not be required to use a vacuum attachment under the following conditions:

- a) When approved by Engineer.
- b) When the blasting sand will be confined by mechanical means to small area.
- c) When a vacuum type sweeper immediately follows the blasting operation or when traffic can be safely routed around the sand until it is swept up.

#### **314-2.2 Measurement.**

*Replace the subsection in its entirety with the following:*

Removal of traffic striping and markings will be measured as a lump sum item.

#### **314-2.3 Payment.**

*Replace the subsection in its entirety with the following:*

Payment for removal of traffic striping and curb markings shall be considered as included in the Contract Lump Sum Price bid for "Thermoplastic Striping, Pavement Markings, Blue Dots Raised Pavement Markings, and Legends", and no additional compensation shall be allowed therefor.

### **314-3 REMOVAL OF PAVEMENT MARKERS.**

#### **314-3.1 General.**

#### **314-3.2 Measurement.**

*Replace the subsection in its entirety with the following:*

Removal of pavement markers will be measured as a lump sum item.

#### **314-3.3 Payment.**

*Replace the subsection in its entirety with the following:*

Payment for removal of pavement markers shall be considered as included in the Contract Lump Sum Price bid for Remove "Thermoplastic Striping, Pavement Markings, Blue Dots Raised Pavement Markings, and Legends", and no additional compensation shall be allowed therefor.

### **314-4 APPLICATION OF TRAFFIC STRIPING AND CURB AND PAVEMENT MARKINGS.**

#### **314-4.1 General.**

*Add the following after the first sentence in the first paragraph:*

Striping and pavement markings, other than those called for on the Plans, which are damaged or darkened as a result of construction, including wheel markings by public traffic or equipment, shall be repainted or replaced by the Contractor at his expense.

Paint shall be installed according to Standard Plan 710, unless otherwise approved by the Engineer.

#### **314-4.2 Control of Alignment and Layout.**

##### **314-4.2.1 General.**

*Replace the first paragraph with the following:*

The Contractor shall perform all layout, alignment and spotting for traffic stripes and markings. No section of street shall be without the proper striping overnight. Cat tracks may be used to delineate traffic lanes overnight, for one night only, until permanent striping is applied. If permanent striping will not be applied within one night, the Contractor shall install temporary

reflective pavement markers at 5-foot intervals around curves, intersections and other areas with limited sight distance. Temporary reflective pavement markers shall be spaced at 25-foot intervals when sight distance is 100-feet or greater. The 'spot' shall not be more than 3 inches in width. Paint for cat tracks shall be the same color as the item for which it is placed.

The Contractor shall not commence painting of pavement markings or striping until the Engineer has checked and approved cat-tracking and spotting and authorized the Contractor to proceed.

### **314-4.3 Painted Traffic Striping and Curb and Pavement Markings.**

*Add the following as the sixth bullet:*

- f) the relative humidity is below 75%.

#### **314-4.3.4.2 Striping Machines.**

*Add the following to the second set of bullets:*

- i) laser guidance equipment capable of maintaining the alignment of traffic stripes with an accuracy equivalent to or better than that obtainable through use of cat tracking, as determined by the Engineer. Dribble line cat tracking will not be permitted.

#### **314-4.3.5 Application.**

*Add the following to the first paragraph:*

Except for black paint, each coat of traffic paint shall have reflective glass beads uniformly incorporated to a minimum depth of one-half the diameter of the bead immediately after application of the paint. Beads shall be applied at the rate of 5 pounds per gallon in the first coat and 8 pounds per gallon in the second and third coats. Newly paved and resurfaced streets or portions thereof shall be striped within 24 hours after completion of said work and shall not be opened to public traffic without striping or other delineation approved in advance by the Engineer.

#### **314-4.3.7 Payment.**

*Replace the first and second paragraphs with the following:*

Payment for temporary painted traffic stripes, curb markings, and pavement markings, including furnishing all labor, materials, tools, equipment and incidentals necessary for doing the work shall be considered as included in the Contract Lump Sum Price bid item for "Thermoplastic Striping, Pavement Markings, Blue Dots Raised Pavement Markings, and Legends" and no additional compensation shall be allowed therefor.

### **314-4.4 Thermoplastic Traffic Striping.**

#### **314-4.4.6 Payment.**

*Replace the first and second paragraphs with the following:*

Payment for thermoplastic traffic stripes and pavement markings, including furnishing all labor, materials, tools, equipment and incidentals necessary for doing the work shall be considered as included in the Contract Lump Sum Price bid item for "Thermoplastic Striping, Pavement Markings, Blue Dots Raised Pavement Markings, and Legends" and no additional compensation shall be allowed therefor.

### **314-4.6 Protection from Damage.**

*Add the following:*

Striping and pavement markings, other than those called for on the Plans, which are damaged or darkened as a result of construction, including wheel markings by public traffic or equipment shall be repainted or replaced by the Contractor at his/her expense.

Precautions in the handling and application of paints and/or thermoplastics shall be in accordance with all applicable occupational safety and health standards, rules, regulations and

orders established by the State of California.

### **314-5 PAVEMENT MARKERS.**

#### **314-5.1 General.**

*Add the following to the end of the paragraph:*

Blue Dot pavement marker shall be installed per Standard Plan 531.

#### **314-5.6 Payment.**

*Replace the entire section with the following:*

Payment for reflective and non-reflective markers, including furnishing all labor, materials, tools, equipment and incidentals necessary for doing the work shall be considered as included in the Contract Lump Sum Price bid item for " Thermoplastic Striping, Pavement Markings, Blue Dots Raised Pavement Markings, and Legends" and no additional compensation shall be allowed therefor.

*Add the following section:*

## **PART 6 – TEMPORARY TRAFFIC CONTROL**

### **SECTION 600 – ACCESS**

#### **600-1 GENERAL**

*Add the following after the first sentence:*

The Contractor shall provide continuous, unobstructed access for all existing access roads, paved or unpaved, within and through the Work site unless otherwise specified by the Engineer. Existing access roads may be rerouted to avoid construction activities, where needed, upon approval of the Engineer.

#### **600-2 VEHICULAR ACCESS**

*Add the following after the first paragraph:*

Adequate traffic control devices shall be placed to direct traffic entering or exiting driveways to the correct travel lanes.

The Contractor shall cooperate with the various parties involved in the delivery of mail and the collection and removal of trash and garbage to maintain existing schedules for these services. If necessary, the Contractor may move residential trash cans to locations accessible for collection and then return the trash cans to the original place of residence to be picked by the resident. Residents shall be responsible for marking trash cans with their home address.

Roadway excavation and fill construction shall be conducted by the Contractor in a manner to provide a reasonable satisfactory surface for traffic. Unless otherwise authorized, work shall be performed in only-half the roadway at one time. One half shall be kept open and unobstructed until the opposite side is ready for use. If only one-half a street is being improved, the other half shall be conditioned and maintained as a detour.

Whenever the Contractor's operations temporarily require one-way traffic or create a condition not accepted by the Engineer, the Contractor shall provide and station competent flaggers whose sole duties shall consist of directing the movement of traffic through or around the Work.

*Insert the following subsections:*

#### **600-2.1 Informational Project Sign.**

The Contractor shall furnish and install Informational Project Signs per Bid schedule constructed on 4-foot by 8-foot plywood or metal and posted within the parkway adjacent to the street. Signs shall be mounted on two posts at least 7 feet above the pedestrian travel way. Signs and sign posts shall be located within the public right-of-way and may not hinder or obstruct

driver's line of sight. Placement shall not violate or compromise current ADA access requirements. The wording and size of the letters shall be approved by the Engineer prior to fabrication. Placement shall be approved by the Engineer prior to installation. Refer to Standard Plan 522.

Informational Project Signs shall be posted at least 3 Days prior to start of construction and remain posted until the final job walk is completed. The signs shall then be removed and properly disposed. Contractor shall be responsible for the maintenance of these signs until removed. Full compensation for the informational project signs, including construction, deployment, maintenance, removal, and furnishing of all necessary labor, equipment, materials, and all other related costs shall be considered as included in the Lump Sum Bid Price for "Informational Project Signs." Payment for the Informational Project Signs shall be paid under the Contract Lump Sum Price at 90% for the completed installation of the signs and 10% for the removal and disposal of the signs upon completion of the Work.

#### **600-2.2 Public Notification.**

The Contractor shall prepare public notification fliers in English and Spanish per Bid schedule. Fliers shall notify residents and businesses of the Work and include information describing the Work, how it may affect them and contact information of City and Contractor personnel responsible for the Work. The Engineer will provide the contact information for the City to be included on the flier at the pre-construction meeting. Contractor shall submit draft versions of the flier in English and Spanish to the Engineer for review and approval prior to starting the Work. Contractor shall distribute fliers as appropriate to provide advance notification of the Work to residents and businesses adjacent to or affected by the Work. Refer to sample provided in Appendix F.

Full compensation for the public notification shall include all necessary labor, equipment, materials, and all other related costs for preparation, copying, and distribution shall be considered as included in the Lump Sum Price Bid for "Public Notification."

#### **600-3 PEDESTRIAN ACCESS**

*Add the following before the first paragraph:*

Alternative routes for the pedestrians and bicyclists along the Project site shall be clearly marked and safety of those that utilize the path shall be considered at all times. This includes the use of proper lighting (where appropriate), fencing/shielding, proper storage of equipment and construction supplies, covering loose piles of soil, silt, clay, sand debris, or other earthen material so as to eliminate any discharge onto the existing pathway or temporary pathway, and immediately hosing down/cleaning such areas of the existing pathway or temporary pathway that have been affected by construction debris or sedimentation from the Project.

### **SECTION 601- WORK AREA TRAFFIC CONTROL**

#### **601-1 GENERAL**

#### **601-2 TRAFFIC CONTROL PLAN (TCP)**

*Add the following after the last paragraph:*

The Contractor shall provide traffic control and shall follow the provided traffic control plan as approved by the City when required by the scope of construction. Key traffic control schedule activities and milestones shall be included in the Contractor's construction schedule as specified in 6-1.

In general, when re-striping or when construction affecting an existing roadway is necessary, a traffic control plan is required. A traffic control plan will also be required under the following conditions:

- d) Work within the roadways of E Sixth Street, E Grand Boulevard, and Rimpau Avenue.



- e) When traffic is to be diverted to the left of a double yellow centerline for overnight construction, unless otherwise directed by the Engineer.
- f) When the Work area is an intersection or adjacent thereto and requires a transition through the intersection.
- g) When a traffic lane is obstructed for more than three consecutive nights, unless otherwise approved by the Engineer.
- h) When traffic volumes dictate that the minimum number of traffic lanes cannot be maintained with the existing channelization.
- i) In other unusual situations where traffic and physical conditions such as speed, restricted visibility, grade, or alignment require special treatment.
- j) When directed by the Agency or required by the Special Provisions.

The requirements set forth in the current CA MUTCD Part 6 Temporary Traffic Controls shall govern the design of the proposed traffic control. Traffic control plans shall be prepared and stamped by a Civil or Traffic Engineer registered by the State of California.

The traffic control plan shall be drawn to a 1" = 40' scale on common size sheets, either 8 1/2" x 11", 8 1/2" x 14", 11" x 17", or standard 24" x 36" plan sheets as dictated by the length of the Project. The total length of the Project shall be shown including the advance signing and striping transitions in advance of the Work area; and existing striping, signing and raised medians, if any. The sheets shall display the Project name; phase identification; name of firm preparing the plan; plan; name and stamp of the Civil or Traffic Engineer; approval block for the Agency or Agencies involved; north arrow; sheet number; and number of sheets comprising the traffic control plans. General notes and symbol definitions shall be included when required. Adequate dimensioning shall be provided to allow for Agency checking and proper field installation.

Simple daytime lane closures may be installed in accordance with the CA MUTCD Part 6 Temporary Traffic Controls without a plan submittal when approved by the City. However, a traffic control sketch may be required by the City for more complex temporary daytime installations. The traffic control sketch shall display the phase identification and the name of the designer, firm, and the Project.

In no case shall traffic be diverted from the existing traveled way without prior approval of the Engineer. Detour striping will not be permitted on any finish course of asphalt concrete pavement constructed on the Project. Temporary striping shall be detour grade traffic tape in this case.

In order to facilitate the flow of traffic during the Contract duration, the City reserves the right to extend the limits of the Project to include any areas where removal of striping or marking, construction of detour pavement, or signing and delineating is deemed necessary by the Engineer.

The Contractor will be responsible for obtaining an Encroachment Permit prior to the start of any work. Personal vehicles of the Contractor's employees shall not be parked on the traveled way at any time.

A detailed TCP, approved by the Engineer, has been prepared for all construction work within any public right-of-way. No reduction of the traveled way width shall be permitted on any City street **outside of the work hours stipulated in the TCP** during weekdays, or anytime on weekends or holidays, or when active work is not being done, unless prior authorization to do so is granted by the Engineer.

The Contractor shall notify the Police, Fire, Traffic, and Public Works Departments of the City of Corona at least 48 hours in advance of closing, or partially closing, or of reopening, any street, alley or other public thoroughfare, and shall comply with their requirements. If the telephone numbers herein below are changed, the Contractor is not relieved of the responsibility of notifying said departments.

The following telephone numbers are listed to assist the Contractors in compliance with these requirements:

- Fire Department ..... (951) 736-2220
- Police Department..... (951) 736-2330
- Public Works Department (Traffic & Engineering)..... (951) 736-2266

All traffic control and safety devices, equipment and materials, including but not limited to cones, delineators, flashing warning lights, barricades, high level warning devices (flag trees), flags, signs, markers, portable barriers, flashing arrow signs, markings and flagging equipment, shall be provided and maintained in "like new" condition.

The Contractor shall furnish and properly install, construct, erect, use and continuously inspect and maintain, 24 hours per day, 7 days per week, all said devices, equipment and materials, and all temporary and permanent pedestrian and driving surfaces as necessary to provide for the safety and convenience of and to properly warn, guide, control, regulate and channelize Project workers and the public beyond said limits as necessary to include areas affecting or affected by the Work, from the start of Work to the completion of the Work.

High level warning devices (flag trees) are required at all times for any work being performed within the roadway, unless otherwise specifically authorized by the Engineer.

Flashing arrow boards will be required on all streets with 4 or more lanes (2 in each direction) or as deemed necessary by the Engineer.

All barricades shall be equipped with flashing warning lights when installed during hours of darkness and all traffic cones shall be no less than 28 inches in height except that shorter cones, 12 inches high or higher, may be used during striping maintenance operation where the only function of the cones is to protect the wet paint from traffic.

Except as otherwise authorized by the Engineer, 2-way vehicular traffic shall be maintained at all times within two 11-foot wide lanes or 13-foot wide lane when adjacent to the curb.

Properly trained and experienced flaggers shall be provided to direct traffic when said traffic is to be interrupted for short periods of time, when 2-way traffic is to be reduced to one-way traffic at such time as is necessary to safely pass the traffic through or around the Work area, and when so directed by the Engineer.

Any traffic control and safety devices and equipment being used which becomes damaged, destroyed, faded, soiled, misplaced, vandalized, worn out, inoperative, lost or stolen shall be promptly repaired, refurbished and/or replaced, and any traffic control and safety devices and equipment being used which are displaced or not in an upright position from any cause, shall be promptly returned or restored to their proper position.

An unobstructed view of all signs and warning devices including, but not limited to, stop signs, stop ahead signs, street name signs and other regulatory, warning and construction signs, markers and warning devices shall be maintained at all times. No trucks or other equipment or materials shall be stopped, parked or otherwise placed from the view of vehicular and/or pedestrian traffic to which it applies.

When entering or leaving roadways carrying public traffic, the Contractor's equipment, whether empty or loaded, shall yield to said public traffic at all times, except where the traffic is being controlled by Police officers, Fire officers, or at traffic signalized intersections.

Stockpiling and/or storage of materials on any public right-of-way or parking areas will not be allowed without specific permission of the Engineer. Materials spilled along or on said right of way or parking area shall be removed completely and promptly. All stockpile and/or storage areas shall be kept in a safe, neat, clean and orderly fashion, and shall be restored to equal or better than original condition upon completion of the Work.

Work involving the closure of, or partial closure of existing streets, and where vehicular access to the abutting property must be restricted, shall be so selected, arranged and scheduled that the persons requiring access to said abutting property and/or residents along said streets affected

will be able to park within a reasonable distance of not more than 500 feet from their homes and/or destination; and in addition, no two adjoining streets shall be closed at the same time, except as otherwise authorized by the Engineer.

When work has been completed on a particular street or has been suspended or rescheduled and said street is to be opened to vehicular traffic, all equipment, "NO PARKING" signs, other obstructions and unnecessary traffic control devices and equipment shall be promptly removed from the street, except as otherwise authorized or directed by the Engineer. This will include the placement of temporary asphalt paving in vehicular travel lanes and/or pedestrian walkways, as appropriate. Temporary traffic striping, when applicable, shall be applied prior to opening any newly paved area to traffic. This includes lane and centerlines. The Contractor shall also remove all utility markings identifying utility locations specifically marked for the Work when work has been completed on a particular street.

Should the Contractor be neglectful, negligent or refuse, fail or otherwise be unavailable to promptly, satisfactorily and fully comply with the provisions specified and referred to hereinabove, the City reserves the right to correct and/or mitigate any situation, which in the sole opinion of the Engineer constitutes a serious deficiency and/or serious case or non-compliance, by any means at its disposal at the Contractor expense, and in the case of a contract City project, to deduct the cost therefor from the Contractor's progress and/or final payments. Such corrective actions taken by the City shall not reduce or abrogate the Contractor's legal obligations and liability for proper traffic control and safety measures and shall not serve to transfer said obligations and liability from the Contractor to the City or the City's agent.

Violations of any of the above provisions and/or provisions of the referenced publications, unless promptly and completely corrected to the satisfaction of the Engineer, shall, at the sole discretion of the City, be grounds for termination of the Contract or shut down or partial shut-down of the Work without compensation to the Contractor, or liability to the City, all as prescribed by contractual obligations or State law, whichever is applicable.

Should the Engineer point out the inadequacy of warning devices or should the Engineer approve the location of warning devices, such action shall not relieve the Contractor of responsibility for public safety, nor abrogate the Contractor's obligation to furnish and pay for these devices. Should it be determined, during hours other than work hours and the Contractor is unavailable, that the warning devices are inadequate; the City may furnish and erect such additional devices as may be necessary.

### **601-3 PAYMENT**

*Replace the first sentence with the following:*

All costs incurred for preparing the TCP, furnishing labor, materials, tools, equipment and incidentals; maintaining, servicing, and removing work area control required for the Work shall be included in the Lump Sum Bid item for "Traffic Control" and no additional compensation shall be allowed therefor.

*Add the following subsections:*

### **601-4 Notification and No Parking Signs.**

The Contractor shall contact and notify, with printed notices, all residents, businesses and public agencies fronting on, or along, or affected by the proposed work, a minimum of 2 full Days prior to performing any work which will close or partially close the street or which will disallow street parking.

The printed notices shall contain a general description of the work to be done, the location and limits of the work, the day(s) and date(s) that the work is to be done, a statement that the street is to be closed or partially closed to vehicular traffic during construction, and a statement that on-street parking will be prohibited between the hours of 6:00 AM and 5:00 PM on the day(s)

of the work as called for on the 'NO PARKING' signs.

The Contractor shall post 'NO PARKING' signs at 50-foot maximum spacing on 1-inch x 2-inch wood stakes along sides of the street, 2 Days in advance of the Work and shall maintain said signs throughout the period of time that will disallow parking.

The 'NO PARKING' sign shall be approximately 14 inches x 22 inches, printed in red letters on a white background, and shall contain information and be laid out as follows:

NO PARKING		
TOW-AWAY ZONE		
6:00 AM - 5:00 PM		
FROM		
DAY		DATE
TO		
DAY		DATE
FOR		
CONSTRUCTION OF SIDEWALKS		
OR CURB OR BOTH		
Violators will be Cited and Vehicles Towed		
Away at Owners Expense		
per		
CVC22651L & CVC22654D		

Posting of 'NO PARKING' signs on trees, utility poles, fire hydrants or other streetscape features will not be allowed. The signs shall be immediately removed upon completion of the work that disallows parking.

The Contractor shall document the day, date and time that the signs are installed because the No Parking restriction will not be enforced until the signs have been in place 48 hours.

The above described printed notices and signs shall be submitted to the Engineer for review and approval prior to the pre-construction meeting and at least 7 Days before the start of any work.

The Contractor shall make every reasonable effort to arrange with the owners of illegally parking vehicles to remove their vehicles from the street before summoning the police to tow away vehicles.

In addition to the above requirements, the Contractor shall notify the Post Office, Police Department, Fire Department, Water Utility, ambulance service, Dial-a-Ride, school district transportation manager, street sweeping service, trash collection service, and affected utilities, hospitals, schools and governmental agencies a minimum of 2 full calendar days prior to the start of work.

Full compensation for conforming to 7-10.2.2.3 shall be considered as included in the various items of work involved and no additional compensation shall be allowed therefor.

**SECTION 602 – TRAFFIC CONTROL DEVICES**

**602-1 GENERAL.**

The following sets forth the specifications for traffic control devices used in temporary traffic control zones. Retroreflective sheeting shall conform to ASTM D 4956.

**602-2 COVERING FOR EXISTING TRAFFIC SIGNS AND SIGNAL FACES.**

**602-2.1 General.**

When the traffic control or temporary traffic signal modification plans show, or the Special Provision specify the temporary covering of traffic signs or signal indications they shall be covered as specified in 313.

Covers shall be made from outdoor grade, weather resistant cloth, plastic, or metallic material and shall be of the color specified herein. The cover shall be designed to be easily installed by hand without the use of tools. The covers shall be secured in place with bolt snaps attached to elastic straps. The straps shall be permanently attached to the cover.

#### **602-2.2 Covers for Vehicular Indications.**

Contractor shall cover all the non-functioning vehicle heads utilizing signal head covers that are specially fabricated for this purpose. Signal head covers shall be a matte tan color or a contrasting color to the signal head. The size of the cover shall closely fit and encapsulate the signal head.

#### **602-2.3 Covers for Pedestrian Indications.**

The entire pedestrian indication shall be covered with a cover manufactured for that purpose. The covers shall be a matte black color. The size of the cover shall closely fit and encapsulate the pedestrian indication.

#### **602-2.4 Covers for Signs.**

When signs in temporary traffic control zones are covered, they shall be covered with a cover manufactured for that purpose. The cover material shall be weather resistant cloth, plastic or metallic material and shall be of sufficient density to block out the sign face or message so that they are not visible to the driver.

### **602-3 SIGNS.**

#### **602-3.1 General.**

The signs shall be as shown in the WATCH or the California MUTCD. Each sign shall consist of a base, standard or framework and a sign panel. The units shall be capable of being delivered to the Work site and placed in immediate operation. The Contractor shall provide and maintain graffiti free construction signs during construction.

New signposts shall be installed in accordance with the City of Corona Standard Plan No. 519. New signs shall be reflectorized Diamond Grade Material (3M) with anti-graffiti coating or equal and shall be certified as meeting all applicable requirements.

### **602-4 SIGN ENHANCEMENT DEVICES.**

#### **602-4.1 General.**

Sign enhancement devices consist of Flags, High Level Warning Devices, Warning Lights, Portable Changeable Message Signs, Flashing Arrow Signs, and Flashing Arrow Bars.

#### **602-4.2 Warning Lights.**

##### **602-4.2.1 General.**

Warning lights shall be portable, lens directed, enclosed lights with a yellow lens. They shall consist of a lighting unit, a flasher unit, a visor, a backplate, a standard, a battery power source and a base. The units shall be assembled to form a complete self-contained flashing warning light that can be delivered to the Work site and placed in immediate operation.

##### **602-4.2.2 Standard and Base.**

The standard shall be adjustable to provide a variable mounting height between 3 feet to 9 feet 10-1/8 inches measured from the bottom of the base to the bottom of the lens. Provisions shall be made for securing the standard at the height specified in 313. The standard shall be securely attached to the base and a sufficient length of multi-conductor, neoprene jacketed cable as required for full vertical height shall be provided.

The base shall be large enough to accommodate a minimum of two 12 V automotive type storage batteries, and shall be of such shape and mass that the warning light will not roll in the event it is struck by a vehicle or pushed over.

Standards and bases shall be finished with 2 applications of commercial quality orange enamel conforming to color No. 12473 of Federal Standard 595B.

#### **602-4.2.3 Warning Light Assembly.**

Warning lights assembly shall be weatherproof and shall be capable of operating a minimum of 150 hours between battery recharge or other routine maintenance. Lamps shall be rated at 25 W for operation with a 12V battery current. The color of the light emitted shall be yellow. Portable flashing beacons shall be capable of use in either a steady burn or flashing mode. Portable beacons shall conform to the requirements of ANSI D.10.1 and Table 602-4.2.3(A).

**TABLE NO. 602-4.2.3(A)**

	<b>Type A Low Intensity</b>	<b>Type B High Intensity</b>	<b>Type C and D Steady Burn And 360° Steady Burn</b>
Lens Size	7" Dia. ½" Border	12" Dia.	----
Lens Directional Face	1 or 2	1	1 or 2
Flash Rate per Minute	55 to 75	55 to 75	Constant
Flash Duration <sup>1</sup>	10%	8%	Constant
Minimum Effective Intensity <sup>2</sup>	40 Candles	35 Candles	----
Minimum Beam Candle Power <sup>2</sup>	----	----	2 Candles
Visible on a Clear Day	3000 ft	----	3000 ft
Visible on a Sunny Day	----	1000 ft	----
Hours of Operation	Dusk to Dawn	24 hrs/day	Dusk to Dawn

1. Length of time that instantaneous intensity is equal to or greater than effective intensity.
2. These values must be maintained within an elliptical pattern 9 in. on each side of the vertical axis and 5 in each side of the horizontal axis.

#### **602-4.2.4 Visor and Backplate.**

Warning light units shall be equipped with a 7 - 7/8-inch minimum length visor and a backplate. The interior of the visor and the front face of the backplate shall be finished with 2 applications of commercial quality flat black enamel conforming to 210.

#### **602-5 TEMPORARY TRAFFIC STRIPING AND PAVEMENT MARKINGS.**

Paint for temporary traffic striping and pavement markings shall conform to 214-4.

### **PART 9 - MODIFIED ASPHALTS, PAVEMENTS AND PROCESSES**

#### **SECTION 900 – MODIFIED ASPHALTS, PAVEMENTS AND PROCESSES**

##### **SECTION 901 – MICRO-MILLING**

###### **901-1.1 General.**

Micro-milling shall consist of the cold milling of existing asphalt concrete pavement with a milling machine equipped with a cutting drum specifically designed and constructed for micro-milling. The resulting pavement surface shall be suitable for use as a temporary pavement driving surface in advance of a FOG seal or other surface treatment. Micro-milling to be performed in accordance with these Specifications and Plan details.

###### **901-1.2 Milling Machines.**

Milling machines shall conform to 302-1.2 and as follows:

- a) Be equipped with a micro-milling drum with tungsten-carbide-tipped cutting teeth spaced no greater than 1/4 inch apart on center. The configuration of the teeth shall be such that the deviation in elevation between any 2 teeth does not exceed 1/16 inch.
- b) Be capable of removing asphalt concrete pavement to a tolerance of  $\pm 1/8$  inch.
- c) Be equipped with an automatic grade control system operating in "profile" mode. The system shall be either:
  - 1) A 30-foot long paving machine ski with spring-loaded feet attached to the bottom on not more than 1.5-foot increments such that the feet rise and fall over small irregularities on the pavement surface. The upper part of the ski shall be one piece and of such construction that it will not flex or bend by more than 1/8 inch at either end when supported off the grade by a fixture located at its center of gravity. The grade control system shall be referenced off the center of the ski, with skis mounted on each side of the milling machine such that the ski's longitudinal center is even with the center of the milling machine's cutting drum. Or,
  - 2) A sonic averaging system with automated controls. Each corner of the milling machine shall be equipped with sonic grade averaging and slope sensors. The system shall feature plug-in connections, internal cable routing, 2 dual control boxes for ground personnel each capable of controlling each side of the milling machine, and a separate control box for the operator. Whichever system is used, the milling will conform to the line and grade tolerances of this specification.
- d) The milling machine shall be equipped with a tier III (minimum) and must be compliant with all California Air Resource Board regulatory requirements.
- e) The milling equipment shall have a minimum size cutter head of 72" such as a Wirtgen W200 or equivalent.

### **901-1.3 Milling Operations.**

Each successive pass of the milling machine shall meet the line and grade of the previous pass. The speed of the milling machine shall be maintained at a rate which results in a uniform pavement texture.

Micro-milling shall result in a grid-patterned textured pavement surface with longitudinal ridges approximately the same distance apart as the cutting teeth. The ridges shall be consistent in depth, width, and profile. The distance between the top of each ridge and adjacent valleys shall not exceed 1/8 inch. The resulting profile and cross slope of the milled pavement surface shall be such that a 12-foot long straightedge laid perpendicular or parallel to the centerline will not allow a shim with a width of 1 inch and a thickness of 3/16 inch to pass under the straightedge at any point except planned grade breaks. However, many streets may have crowns or parabolic curves.

Milled pavement surfaces which do not conform to the requirements above shall be corrected by the Contractor. The Contractor shall prepare and submit to the Engineer for approval a correction plan prior to initiating corrective action.

During milling operations, the cutter teeth shall be regularly checked and replaced as necessary to maintain the tolerances specified by the manufacture.

### **901-1.4 Work Site Maintenance.**

Work site maintenance shall conform to 7-8. A self-loading motorized street sweeper equipped with both brooms and a vacuum system, and a functional water spray system shall immediately follow the milling machine. Sweeping shall continue until loose millings have been completely removed and as requested by the Engineer. The Contractor will continue to maintain

the milled surface until a surfacing treatment is applied or until accepted by the Engineer. A surface treatment must be applied within 7 Days. Any raveled sections of the pavement will be repaired as directed by the Engineer and paid as Extra Work in conformance to 3-3.

**901-1.5 Disposal of Millings.**

Millings shall be considered the property of the Contractor and shall be disposed of by the Contractor at a bona fide recycling center or facility. The Contractor shall notify the Engineer a minimum of 2 Working Days prior to the start of milling operations of the recycle disposal location.

**901-1.6 Measurement.**

Micro-milling will be measured by the square foot.

**901-1.7 Payment.**

Payment for micro milling will be made at the Contract Unit Price per ton of asphalt pavement for "Cold Mill and Asphalt Finish Course Pavement Type D2-PG 64-10."